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ProductInformation

p-Iodonitrotetrazolium Violet



IODONITROTETRAZOLIUM FORMAZAN Sigma Prod. No. 17375 Replacement for Product Code 25,109-7

CAS NUMBER: 7781-49-9 SYNONYM: INT formazan

PHYSICAL DESCRIPTION:

Appearance: Dark brown powder with dark red cast Molecular formula: $C_{19}H_{14}IN_5O_2$ Molecular weight: 471.3 Melting point: 184-186EC¹ Spectral data: The absorption maximum appears to be solvent-dependent. $E^{mM}(644nm) = 84$ (alkaline DMF)^{1,2} $E^{mM}(485nm) = 20$ (95% alcohol)³

STORAGE / STABILITY AS SUPPLIED:

This product is stable for at least two years stored at room temperature.

SOLUBILITY / STABILITY OF SOLUTIONS:

INT formazan is insoluble in water, but is soluble in dimethyl formamide (DMF) at 50 mg/mL, giving a dark red solution. It is also slightly soluble in 95% ethanol (7mg/100 mL), or in ethyl acetate. INT formazan is also reportedly rather fatsoluble. Solutions are reasonably stable stored in the dark at 2-8EC.

GENERAL REMARKS:

INT formazan, I7375, is the reduced form of p-iodonitrotetrazolium violet, Sigma I8377. The oxidized form is somewhat soluble in water; this reduced form is not, so it can be visually detected in a histochemical assay, or extracted using ethanol or other organic solvent and determined spectrophotometrically. Please see suggested

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references for the use of I8377 below.

IODONITROTETRAOLIUM FORMAZAN Sigma Prod. No. 17375

CITED REFERENCES:

- 1. Sigma quality control.
- 2. Fox, S.W. and Atkinson, E.H., J. Am. Chem. Soc., 72, 3629 (1950).
- 3. Green, J.D. and Narahara, H.T., J. Histochem. Cytochem., 28, 408, (1980).
- 4. Conn's Biological Stains, 9th Ed., ed. R.D. Lillie (Williams and Wilkins, 1977), p. 228.

ADDITIONAL REFERENCES:

Aki, J.S., and Remsen, C.C., *Applied & Environ. Micro.*, 41 (5), 1132-1138 (1981). "Comparison of two direct-count methods for determining metabolizing bacteria in freshwater."

Altman, F.P., Histochem. J., 8, 47-485 (1976). "Tetrazolium Salts: A Consumers Guide."

Babson, A.L and Phillips, G.E., *Clin. Chem. Acta*, 12, 210-215 (1965). "A rapid colorimetric assay for serum lactic dehydrogenase."

Babson, A.L and Babson, S.R., *Clinical Chemistry*, 19, 766 (1973). "Kinetic colorimetric measurement of serum lactate dehydrogenase activity."

Green, F.J., The Sigma-Aldrich Handbook of Stains, Dyes, and Indicators, p. 410 (1990).

Owens, T.G. and King, F.D., *Marine Biol.*, 30, 27 (1975). "The measurement of respiratory electron-transport-system activity in marine zooplankton."

Zimmerman, R. et al., *Applied & Environ. Micro.*, 36 (6), 926 (1978). "Simultaneous determination of the total number of aquatic bacteria and the number thereof involved in respiration."